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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shalini Periyalwar

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Ralph A. Dowell of DOWELL & DOWELL P.C.

2111 Eisenhower Ave

Suite 406

Alexandria, VA 22314

EXAMINER

HSU, ALPUS

ART UNIT

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2619

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/747,942	Applicant(s) PERIYALWAR ET AL.	
	Examiner Alpus H. Hsu	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 47-80 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2619

1. Claims 47-80 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group of invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 22, 2008. The applicant is requested to cancel the above nonelected claims to expedite the prosecution of the instant application.

2. Claims 2-4, 6, 8, 12, 13 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, line 3, it is confusing for reciting “access network nodes”. Are they referring to the network access nodes as in claim 1, line 2?

Claims 3, 4, 8, 12, 13 and 44 are rejected for being dependent on claim 2.

In claim 6, lines 3-4, “circuit second” should read as -- second circuit -- for correcting the typographical error.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 15, 16, 33 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by WOLFE et al. in Pub. No. US 2002/0159409 A1, hereinafter referred to as WOLFE.

Referring to claim 1, WOLFE discloses a multi-hop wireless backhaul network (18) comprising: at least one NAN (network access node) (16); a plurality of BNs (base nodes) (22);

a plurality of AGNs (aggregation nodes) (20), each performing a switching function in relaying traffic between at least one of the base nodes and at least one of the network access nodes (see paragraphs [0007] and [0030]); wherein a hierarchical topology of active wireless connections is established with the at least one network access node at the top of the topology, and the base nodes at the bottom of the topology (see paragraph [0014] and Figure 1).

Referring to claim 2, WOLFE discloses the multi-hop wireless backhaul network in combination with an access network (10) comprising a plurality of access network nodes (16) for which the multi-hop wireless backhaul network is providing backhaul functionality.

Referring to claim 3, WOLFE discloses that at least some of the access network nodes are co-located and connected to or integrated with respective nodes of the multi-hop wireless backhaul network (see Figure 1).

Referring to claim 4, WOLFE discloses that the access network is a cellular wireless access network, and each access network node is a base station transceiver (see paragraph [0014] and Figure 1).

Referring to claim 15, WOLFE discloses the feature of dynamic bandwidth allocation (see paragraph [0043]).

Referring to claim 16, WOLFE discloses the feature of maintaining the topology information (see paragraphs [0045], [0051] and [0052]).

Referring to claims 33 and 34, WOLFE discloses the feature of ranging functionality (see paragraph [0046]).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2619

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5-8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of NAUDUS in U.S. Patent No. 6,412,006 B2, hereinafter referred to as NAUDUS.

Referring to claims 5-8, 12 and 13, WOLFE differs from the claims, in that, it does not disclose the feature of utilizing a plurality of virtual circuits for allocating bandwidth for delay-sensitive traffic, which is well known in the art and commonly used in communications field for dedicated data transmission.

NAUDUS, for example, from the similar field of endeavor, teaches the feature of providing a plurality of virtual circuits for allocating bandwidth for delay-sensitive traffic (see col. 1, lines 31-37, col. 3, lines 15-38, col. 5, lines 30-41), which can be easily adopted by one of ordinary skill in the art to implement to provide dedicated data transmission to further enhance the quality of service for the customers/subscribers.

Art Unit: 2619

8. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of JOHANSSON et al. in U.S. Patent No. 7,058,050 B2, hereinafter referred to as JOHANSSON.

Referring to claims 9-11, WOLFE differs from the claims, in that, it fails to disclose a scheduler for performing scheduling operation, which well known in the art and commonly used in communications field for data scheduling.

JOHANSSON, for example, from the similar field of endeavor, teaches the feature of utilizing scheduler (410) for performing scheduling operation (see col. 11, line 52 to col. 12, line 18), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the efficiency.

9. Claim 14 is are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of NAUDUS, as applied to claims 1 and 5 above, and further in view of MELPIGNANO in Pub. No. US 2005/0190700 A1, hereinafter referred to as MELPIGNANO.

Referring to claim 14, WOLFE in view of NAUDUS differs from the claim, in that, it does not disclose the feature of layer 2 circuit emulation, which is also well known in the art for layered protocol implementation. MELPIGNANO, for example, from the similar field of endeavor, teaches such feature (see paragraphs [0114] and [0116]).

10. Claims 17-20 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of SMITH in PUB. No. US 2004/0179555 A1, hereinafter referred to as SMITH.

Referring to claims 17-20 and 35, WOLFE differs from the claims, in that, it fails to disclose the features of spatially switched antennas and transceiver, which are also well known in the art and commonly used in cellular network communication.

SMITH, for example, from the similar field of endeavor, teaches the feature of utilizing antennas and transceiver (see Figures 1 and 2), which can be easily adopted by one of ordinary skill in the art to implement into the system to provide system with cellular network communication capability.

11. Claims 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of OHARA in U.S. Patent No. 5,495,472 A, hereinafter referred to as OHARA.

Referring to claims 21-27, WOLFE differs from the claims, in that, it fails to disclose the features of alternate connections, failure detection, and automatic path healing, which are all well known in the art for network routing fault detection/correction.

OHARA, for example, from the similar field of endeavor, teaches the features of providing alternate connections, failure detection, and automatic path healing (see col. 1, lines 10-18, col. 2, lines 26-42, col. 2, line 63 to col. 3, line 6), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the system reliability.

12. Claims 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of OHARA as applied to claims 21-27 above, and further in view of JOHANSSON.

WOLFE in view of OHARA differs from the claims, in that, it fails to disclose a scheduler for performing scheduling operation, which well known in the art and commonly used in communications field for data scheduling.

JOHANSSON, for example, from the similar field of endeavor, teaches the feature of utilizing scheduler (410) for performing scheduling operation (see col. 11, line 52 to col. 12, line 18), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the efficiency.

13. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of SMITH as applied to claims 17-20 above, and further in view of OHARA.

WOLFE in view of SMITH differs from the claims, in that, it fails to disclose the features of alternate connections, failure detection, and automatic path healing, which are all well known in the art for network routing fault detection/correction.

OHARA, for example, from the similar field of endeavor, teaches the features of providing alternate connections, failure detection, and automatic path healing (see col. 1, lines 10-18, col. 2, lines 26-42, col. 2, line 63 to col. 3, line 6), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the system reliability.

14. Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of SMITH.

Referring to claims 41-44, WOLFE differs from the claims, in that, it fails to disclose the feature of including an element management system for providing management function, which is also well known in the art for network administration and/or management.

SMITH, for example, from the similar field of endeavor, teaches the feature of providing an element management system (20) for performing management function (see paragraphs [0019] and [0021]), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the system control in network administration/management.

15. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over WOLFE in view of NAUDUS as applied to claims 1, 5-7 above, and further in view of SMITH.

WOLFE in view of NAUDUS differs from the claims, in that, it does not disclose the feature of including an element management system for providing management function, which is also well known in the art for network administration and/or management.

SMITH, for example, from the similar field of endeavor, teaches the feature of providing an element management system (20) for performing management function (see paragraphs [0019] and [0021]), which can be easily adopted by one of ordinary skill in the art to implement into the system to further improve the system control in network administration/management.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meier '636, '746 & '165, Cain '394 & '846, Forslow, and Frelechoux et al. are all cited to show the common feature of multi-hop network consists of network nodes in hierarchical order similar to the claimed invention.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHH

/Alpus H. Hsu/
Primary Examiner, Art Unit 2619